Best Management Practices to Prevent the Spread of Pests and Pathogens in Honeybee Colonies



Photos by Rob Snyder (used with permission)

Many pest and disease problems in managed honeybee hives can be avoided by practicing good sanitation and cultural controls. Prevention is the first and best line of defense against organisms that can harm your colonies.

Sanitation

- Tools should be scrubbed with isopropyl alcohol and sterilized with flame after working in or inspecting a hive. Avoid using other beekeeper's tools that have not been properly cleaned.
- Clothing and gloves that are exposed to a hive where disease is suspected needs to be scrubbed and disinfected with 10% bleach solution or disposed.
- If not using gloves, rinse hands with rubbing alcohol then scrub with soap and water after working in a hive that appears to have been infected with disease.
- When disease is suspected, practice the previously mentioned steps between working hive to hive in the same beeyard.

Cultural Controls

- When purchasing a bee colony, find out if the seller has been treating with antibiotics for pathogens. Treated colonies could already be infected with disease, even in the absence of symptoms.
- Never switch frames from a box that is suspected to have pests and pathogens to a box without such problems.
- Do not purchase or accept used frames, boxes, or other beekeeping equipment that have not been inspected and certified by your county's bee inspector.
- Boxes infected with American foulbrood should be marked with the letters "AFB" followed by the year to prevent unintentional contamination.
- Equipment that has been infected with American foulbrood must be treated or burned and buried.
- Do not leave unused beekeeping equipment in a beeyard. Idle equipment should be destroyed or stored in an area where bees cannot access.

Mechanical Controls

- Plug holes and crevices in boxes to prevent arthropod pests from entering colonies.
- Use a screened bottom board to reduce the population of varroa mites.
- Consider drone brood trapping to control or prevent severe varroa mite infestations.

Fig. 1 Screened bottom to reduce varroa
Photo by Steve Tilmann, used with permission

Genetic Controls

- Purchase stock that is resistant to varroa mites or American foulbrood.

Monitor Colony Health

- Check brood comb for symptoms of American foulbrood on a regular basis.
- Monitor varroa mite presence using a sticky screen, ether roll or powdered sugar roll.
- Know the economic action thresholds for honeybee pests.

Fig. 2: Sticky screen for pest monitoring
Photo by Peggy Greb USDA/ARS, used with permission

Community Resources

- Join a local beekeeping club to learn about pest outbreaks in your area.
- Report abandoned apiary equipment and all suspected cases of American foulbrood to UDAF.
- Renew your beekeeping license every year.
- For more information visit: http://ag.utah.gov/plants-pests/beekeeping.html

References:

Pest Management Strategic Plan for Honey Bees in the Mid-Atlantic States. Bureau of Plant Industry and the Southern Region IPM Center, Virginia Tech and North Carolina University. March 2008. Accessed on web 09 October 2013. http://www.ipmcenters.org/pmsp/pdf/MidAtlanticHoneyBeePMSP.pdf

Ellis, Jamie "Episode 3: Small Hive Beetle." 13 January 2012. Online video. University of Florida Honey Bee Extension and Research Lab. Accessed on 09 October 2013. http://www.youtube.com/watch?v=tydo9rABsK4

Ellis, Jamie "Episode 4: Varroa Mites." 13 January 2012. Online video. University of Florida Honey Bee Extension and Research Lab. Accessed on 09 October 2013. http://www.youtube.com/watch?v=S5vVrAy6CEU

Ellis, Jamie "Episode 5: Foul Brood." 13 January 2012. Online video. University of Florida Honey Bee Extension and Research Lab. Accessed on 09 October 2013. http://www.youtube.com/watch?v=s74WIPpGRHs